APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/762,981	01/21/2004	Taku Kodama	6453P030	5988

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BLAKELY SOKOLOFF TAYLOR & ZAFMAN
12400 WILSHIRE BOULEVARD
SEVENTH FLOOR
LOS ANGELES, CA 90025-1030

EXAMINER
WANG, JIN CHENG

ART UNIT	PAPER NUMBER
2672	

DATE MAILED: 12/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/762,981	KODAMA ET AL.
	Examiner	Art Unit	
	Jin-Cheng Wang	2672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>12 October 2005</u>.

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-19</u> is/are pending in the application.

⠀4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-19</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

⠀Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

⠀Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

⠀a)☐ All⠀b)☐ Some *⠀c)☐ None of:

⠀⠀1.☐ Certified copies of the priority documents have been received.

⠀⠀2.☐ Certified copies of the priority documents have been received in Application No. _____.

⠀⠀3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

⠀* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
⠀Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
⠀Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Applicant's submission filed on 10/12/2005 has been entered. Claims 1, 9, 11-12 have

been amended. Claims 16-19 are newly added. Claims 1-19 are pending in the application.

Response to Arguments

Applicant's arguments filed October 12, 2005 have been fully considered but are not

found persuasive in view of the new ground(s) of rejection set forth below.

As address below, the Claims 1-9 and 11-19 are unpatentable over Chui et al. U.S. Patent

No. 6,904,176 (hereinafter Chui) in view of Murao U.S. Patent No. 6,141,452 (hereinafter

Murao).

For example, Chui discloses or suggests, in column 6, lines 20-56, an image processing

apparatus, comprising:

A size adjusting unit to, if an image is not evenly divisible into a number of fixed size

regions that are equivalently sized, adjust the size of the image at a stage in an encoding process

to form a size-adjusted image so that the size-adjusted image becomes evenly divisible into the

regions; and an encoding unit to encode the size-adjusted image by the regions into a

codestream.

Chui discloses processing logic divides each image of different resolution into a number

fixed sized tiles. When the image cannot be divided evenly, padding by 0's may be necessary as

shown in Fig. 2A wherein padding by 0's adjusts the size of the image. In Fig. 2A, an image at

full resolution is divided into equal sized square tiles and because the last column of tiles are not

square, zeros have been added onto the right edge of the image to enable the last column of tiles

to be square. The fixed sized tiles are further labeled. The processing logic encodes each tile by

encoding the (I, j)th tile of the lowest resolution using JPEG as shown in Fig. 3A. The JPEG

encoder encodes the tile to create compressed bitstream to be sent to the decoder. The claim

recites "size adjusted image", however, notwithstanding Chui's disclosure of adjusting the size

of the original image, Chui also discloses compressing bitstream. Compressing the original

image at the stage of encoding adjusts the size of image. Decompressing at the stage of decoding

also adjusts the size of the image.

Although Chui is not clearly seen to teach the claim limitation of "if an image is not

evenly divisible into a number of fixed size regions that are equivalently sized, adjust the size of

the image", Murao succinctly demonstrates the claim limitation, in Fig. 7b and 7d, column 5,

lines 15-25 and column 6, lines 48-60, that, the image size adjusting unit adjusts size of the

original image to the suitable size for a Wavelet transform. It would have been obvious to have

combined the teachings of Chui and Murao to adjust the size of the original image so that the

image is evenly divisible into a number of fixed size tiles. Doing so would allow the efficient

compressing and restoring of the images to reduce the computing time and the amount of

memory needed using the Wavelet transform and inverse Wavelet transform (Murao column 3,

lines 25-30).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language. .

Claim 10 is rejected under 35 U.S.C. 102(e) as being anticipated by Satoh et al. U.S.

Patent No. 6,895,120 (hereinafter Satoh).

Re claim 10, Satoh discloses an image decoding apparatus, comprising:

A decoding unit to decode a codestream into a size-adjusted image (*Satoh discloses the*

new JPEG 2000 decoding standard which utilizes transforms and provides a new coding scheme

and codestream definition for images in which each image may be divided into rectangular tiles

and if there is more than one tile, the tiling of the image creates tile-components and an image

may have multiple components and tile components can be extracted and decoded independently

of each other; see column 1, line 55 to column 3, lines 7 and column 11, lines 33-65);

An inverse size adjusting unit to re-adjust the size of the size-adjusted image at a stage in

a decoding process to form an original image based on information related to the size of the

original image attached to the codestream (*e.g., column 19, lines 19-36; column 26, lines 16 to*

column 27, line 33. Satoh discloses creating the bit stream compressed image data from these

coding passes as grouped in layers contributing to a higher quality image and adding pixels of a

predetermined pixel value to the image in the reconstruction of the original image. Satoh further

discloses setting zero bitplanes and using extra bits to give more tag tree information in a tile

component level partition in JPEG 2000 compliant decoder algorithm; e.g., column 2, 24 and

29-30. Satoh further discloses the codestream relating to a tile, organized in packets, are

arranged in one, or more, tile-parts and a tile-part header, comprised of a series of markers and

marker segments or tags contains information about the various mechanisms and coding styles

that are needed to locate, extract, decode and reconstruct every tile-component. Satoh discloses

regouping layers and subbands coefficients and arithmetic coder uses contextual information

from previously coded coefficients provided by the bit modeling block about the bit-plane

compressed image data and its internal stage to decode a compressed bit stream; column 2).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

Claims 1-9 and 11-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Chui et al. U.S. Patent No. 6,904,176 (hereinafter Chui) in view of Murao U.S. Patent No.

6,141,452 (hereinafter Murao).

Re claims 1, 9, and 11-12, Chui discloses or suggests, in column 6, lines 20-56, an image

processing apparatus, comprising:

A size adjusting unit to, if an image is not evenly divisible into a number of fixed size regions that are equivalently sized, adjust the size of the image at a stage in an encoding process to form a size-adjusted image so that the size-adjusted image becomes evenly divisible into the regions; and an encoding unit to encode the size-adjusted image by the regions into a codestream.

Chui discloses processing logic divides each image of different resolution into a number fixed sized tiles. When the image cannot be divided evenly, padding by 0's may be necessary as shown in Fig. 2A wherein padding by 0's adjusts the size of the image. In Fig. 2A, an image at full resolution is divided into equal sized square tiles and because the last column of tiles are not square, zeros have been added onto the right edge of the image to enable the last column of tiles to be square. The fixed sized tiles are further labeled. The processing logic encodes each tile by encoding the (I, j)th tile of the lowest resolution using JPEG as shown in Fig. 3A. The JPEG encoder encodes the tile to create compressed bitstream to be sent to the decoder. The claim recites "size adjusted image", however, notwithstanding Chui's disclosure of adjusting the size of the original image, Chui also discloses compressing bitstream, thus adjusting the size of image at the stage of discrete consine transform.

Although Chui is not clearly seen to teach the claim limitation of "if an image is not evenly divisible into a number of fixed size regions that are equivalently sized, adjust the size of the image", Murao demonstrates the claim limitation Fig. 7b and 7d, column 5, lines 15-25 and column 6, lines 48-60, the image size adjusting unit adjusts size of the original image to the suitable size for a Wavelet transform. It would have been obvious to have combined the teachings of Chui and Murao to adjust the size of the original image so that the image is evenly

divisible into a number of fixed size tiles. Doing so would allow the efficient compressing and

restoring of the images to reduce the computing time and the amount of memory needed using

the Wavelet transform and inverse Wavelet transform (Murao column 3, lines 25-30).

Re claims 2, 13, Chui further discloses JPEG 2000 codestream or bitstream processed by

the JPEG 2000 compliant decoder algorithm (e.g., column 7, lines 18-30).

Re Claims 3 and 14, Chui discloses processing logic divides each image of different

resolution into a number fixed sized tiles. When the image cannot be divided evenly, padding by

0's may be necessary as shown in Fig. 2A wherein padding by 0's adjusts the size of the image.

In Fig. 2A, an image at full resolution is divided into equal sized square tiles and because the last

column of tiles are not square, zeros have been added onto the right edge of the image to enable

the last column of tiles to be square. The fixed sized tiles are further labeled. The processing

logic encodes each tile by encoding the (I, j)th tile of the lowest resolution using JPEG as shown

in Fig. 3A. The JPEG encoder encodes the tile to create compressed bitstream to be sent to the

decoder.

Re Claims 4, 15, Chui discloses processing logic divides each image of different

resolution into a number fixed sized tiles. When the image cannot be divided evenly, padding by

0's may be necessary as shown in Fig. 2A wherein padding by 0's adjusts the size of the image.

In Fig. 2A, an image at full resolution is divided into equal sized square tiles and because the last

column of tiles are not square, zeros have been added onto the right edge of the image to enable

the last column of tiles to be square. **The fixed sized tiles are further labeled.** The processing

logic encodes each tile by encoding the (I, j)th tile of the lowest resolution using JPEG as shown

in Fig. 3A. The JPEG encoder encodes the tile to create compressed bitstream to be sent to the

decoder.

Re Claim 5, Chui discloses adjusting the size of the image at a stage between a

component transform and a discrete wavelet transform (column 6, lines 44-63).

Re Claims 6-8, Chui discloses adjusting the size of the image to create a quantized DCT

transformed image tile wherein the quantized DCT transferred image tile is entropy encoded to

create compressed bitstream (column 6, lines 44-63).

Re Claims 16-19:

Chui discloses the regions being tiles (column 6, lines 21-43).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jin-Cheng Wang whose telephone number is (571) 272-7665. The examiner can normally be reached on 8:00 - 6:30 (Mon-Thu).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Razavi can be reached on (571) 272-7664. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jcw